

# Editorial

## Web 2.0: Does It Really Matter?

In the last chapter of *Distance Education: A Systems View* (Moore and Kearsley 2005), titled “Distance Education Is About Change,” Greg Kearsley and I listed some of the main areas in which information and communications technology had advanced since the first edition of our book appeared in 1996. These were (Table 12.2, page 293)

- Internet, broadband, high speed access achieves mass market
- Rich multimedia presentations are delivered by broadband and CD-ROM
- Widespread adoption of DVD players and recorders
- Real-time streaming audio and video
- USB memory sticks
- Online data storage
- Wireless Internet and home networks (e.g., Bluetooth)
- Online gaming and games designed for Java-enabled mobiles
- Growth of games consoles
- MP3 music and MP3 players
- Interactive digital television
- Video on demand and wide-screen monitors
- Digital cameras and Web cameras
- Handheld computers, thin laptops, flat-screen monitors
- E-mail taking over from surface post
- Text messaging, picture messaging, video-phones

Source: British Telecommunications at <http://www.btexact.com>

Looking down this list, I am struck by how easily, how casually, we millennium citizens take technological innovation in our stride—how little time it takes for supposedly revolutionary new information and communication technologies to become commonplace. What American high schooler today is any longer awestruck by an MP3 player or memory stick? Or what senior citizen—like me, whose first camera was a 1940s Kodak Brownie—is intimidated from evaluating the relative pixel power of a range of digital cameras at an online shopping site? Familiar though they are, we might question whether these technologies have made much difference in dealing with the really important issues

of life, those described in, for example, Erik Erikson's writings about the developmental challenges of adolescence, young adulthood, middle and old age, and dying. Yes, we can place a wireless call from the birth room or deathbed instead of looking for a pay phone, or we can review our digitized photographs instantly rather than waiting for a photo developer. As they say, "big deal." However, regardless of how one sees the value of the last decade's technological innovation, it is time—so we are told—to get ready for a new wave. This is a cluster of technologies, widely referred to (see, e.g., the Interview in this issue) as Web 2.0, and (is it believable?) yet another set of technologies labeled Web 3.0!

Citing the Wikipedia, Spivack (2006) defines Web 2.0 as

a supposed second generation of Internet-based services—such as social networking sites, wikis, communication tools, and folksonomies—that emphasize online collaboration and sharing among users.

Among the best known of these services are the social networking sites MySpace and Facebook, numerous Web-logging sites, podcasting, wikis, three-dimensional virtual environments such as Second Life and Active Worlds, and a variety of devices making access to the Internet available for people on the move. Web 3.0, according to Spivack (2006),

a phrase coined by John Markoff of the New York Times in 2006, refers to a supposed third generation of Internet-based services that collectively comprise what might be called "the intelligent Web"—such as those using semantic web, microformats, natural language search, data-mining, machine learning, recommendation agents, and artificial intelligence technologies—which emphasize machine-facilitated understanding of information.

What this means in everyday language is that search engines (not a term we would have used so freely ten years ago!) will become increasingly discriminating, able to answer search questions more precisely, quickly, digging into vastly larger sources of data than hitherto. According to Markoff (2006), early examples of such "technologies that systematically extract meaning from the existing Web," such as "del.icio.us and Flickr, the bookmarking and photo-sharing systems acquired by Yahoo, and Digg, a news service that relies on aggregating the opinions of readers to

find stories of interest.” Other experts include these search technologies as part of their definition of Web 2.0, and I propose to do the same here.

The most common descriptors embracing most of the technologies being considered here are “social software” and “user-created content.” Together they bring out the key distinction from previous technology, as mentioned in the Wikipedia definition, but worth repeating, which is the power provided users *to work together in creating content* through multiple authoring, whether in text, audio, or video. A consequence of this is a third key characteristic, which is the open accessibility of the content created in this way. Thus a wiki is based on collaborative writing and can be made accessible to any Internet user; Flickr stores over 100 million shared images produced by some 4 million members worldwide; there are some 70 million blogs in the “blogosphere,” increasing by more than 100,000 every year; the phenomenon of “folksonomy” results from bloggers and other authors tagging their work according to their personal decisions regarding significant linkages, as compared, for example, with such authority resting with the creators of the index for a traditional book. The sum result of all this is that students, and others,

can build shared collections of resources, whether they be links, photos, videos, documents, or almost any other kind of media. They can find and comment on items in other people’s lists, sharing not only the resources themselves but information and descriptive details about them. The emergence of collective wisdom through tagging allows interesting materials to quickly float to the top and be found. (The New Media Consortium 2007)

These Web 2.0 technologies are being adopted voraciously by young people, including traditional age students—the “digital natives” who have grown up with the Internet. According to figures cited at a recent workshop at Penn State, 80% of our students carry laptop computers, 85% watch video online, 75% use MP3 players, and 82% use text messaging. More generally, 33% of all college students have blogs; postings on MySpace increased sevenfold in the first half of 2006; 67% of teenagers play interactive games online, and 20% (I find this remarkable) have avatars in virtual reality sites. On the latter, according to The New Media Consortium (2007) report,

The use of virtual worlds in education has grown considerably over the past year. Courses now meet in Second Life and other locations.

These spaces are used for training emergency response personnel, developing civic participation and leadership skills, visualizing real time weather data, modeling complex mathematical functions, and experimenting with architectural models, among other uses. A consortium of librarians has built an extensive and growing set of information resources in Second Life. Courses from English to Chemistry hold meetings in virtual worlds, making use of their flexibility and powerful building tools to stage dramas and create realistic 3D molecular models. (18)

Data in this area are elusive and very fast changing. To get a better overview, as well as leads on numerous sources of information, a good place to start is Alexander (2006). For more on educational uses of virtual reality, see the Proceedings of the Second Life Education Workshop, 2006, at <http://www.simteach.com/SLCC06>

Writing in the *Handbook of Distance Education*, Dede et al. (2007) suggest the emerging technologies are already having a significant impact on the way young people learn. Learning that uses this technology requires new—or at least more highly developed—skills. They are skills in searching the wide variety of information sources; skills in sorting and sieving the infinite volume of information available; skills in synthesizing from multiple sources of information—all a long way from traditional skills needed to assimilate “validated” sources of knowledge like that found in textbooks or a professor’s lectures. This searching requires multitasking—using more than one medium at the same time; the sieving requires “Napsterism”—the ability to make good selections; the synthesis means being creative as one recombines other people’s content in forms appropriate to one’s own purposes, which is, of course, not the same thing as merely copying it. Working in virtual reality also requires a variety of new skills, as one moves in an environment in which one no longer merely observes a phenomenon as in a book or traditional video program but becomes an agent in its creation, or at least collaborating with others in shaping it.

### **What Does This Mean for Teaching and Learning at a Distance?**

In the chapter already referred to in *A Systems View* (Moore and Kearsley 2005), we quoted advice from Liz Burge (2001), who suggested that the best way of deciding about the potential usefulness of any new

technology is "... reflecting on the generic principles that support adults' learning and then figure out how and where the technology fits." I think this is excellent advice; indeed I do not know how one can judge the value of a technology with any confidence except by testing it against a theory of teaching and learning (and it should be a matter of more concern that higher education accommodates so many people in positions of influence who have no training in pedagogical theory and practice). Unless one is able to relate what a technology can contribute to learning and to what is needed by teachers to facilitate learning, any new device can dazzle, if only because of its novelty—a vulnerability that vendors of such devices are expert at exploiting! For those of us whose field of study and practice is distance education, it is the principles of distance education we are able to bring to bear in evaluating Web 2.0, as any other technology or proposed new practice. (Classroom teachers have to judge the value of technology against their own theory—often similar, sometimes identical, but in some ways fundamentally different, as I hope is fully appreciated by readers of this journal.) Among the core theoretical principles we will apply are those related to our understanding about different degrees and types of course structure, different types of learner-student, learner-content, and learner-learner interaction, and those describing the relationship of instruction to autonomous learning—all of which principles are encapsulated in the theory of distance education as "a systems approach."

Evaluating the Web 2.0 technologies against these principles would require much more space than I am permitted here; it is in fact a program of research that will occupy the field over the next few years, as different individuals empirically test the different technologies, their testing grounded, one hopes (fervently!) in some part of the general theoretical framework. Here, I conclude with two general propositions. My first proposition is that Web 2.0 technologies offer advantages over Web 1.0 technology in three different respects. Social networking technologies should make constructivist, collaborative knowledge-making more natural and popular among learners and eventually one assumes with their teachers; intelligent search engines offer far more than merely acting as speeded-up encyclopedias for students' research, their greater promise—though still some way off—being as tools for determining learning prescriptions for individual students (a Holy Grail that personality researchers have discussed for at least thirty years); risk-taking being one of the first requirements for learning, virtual reality environments offer opportunities for students to experiment in social as well as physical

domains that were previously unthinkable. Readers will, I am sure, be able to add their own suggestions to this short list of potential benefits. They might feel less sympathetic, however, to my second proposition. This is that these potential benefits of Web 2.0 technologies will only add marginally to the quality of our North American distance teaching, if, as seems too likely, energy and money is invested primarily in adding them on to current methods for designing and teaching distance education courses. Indeed, the overall effect of the new technology will be negative and counterproductive, if interest in the technology draws attention further from the need for reform in the way we design our courses and the need for better training and monitoring of instructors, and especially if we do not change the balance of faculty resources invested at the design stages of teaching compared to the interactive.

For example, if a course is taught on an “island” in Second Life with per-unit learning objectives no better than those found generally in courses offered through Web 1.0 technology, we still have an inferior course, albeit more entertainingly presented—but in education, entertainment value wanes quickly in the eyes of adult, tuition-paying students! Or as a further illustration, let me suggest that any improvement in learning by students collaboratively constructing a report using the Web 2.0 media of Web-logging and YouTube in place of their current Web 1.0 technology of bulletin board/listserv is likely to be only marginal as compared (again, please note that I am only trying to illustrate the general point) with an institutional investment in more staff to advise applicants to the program and for providing learning-to-learn courses for new entrants; or providing ten times (fifty times?) instructor release time and specialist instructor designer support for designing the course; or production of professional quality video components (of course, there are merits in democratically and amateurishly produced materials, but education is also a process in which people who have mastery of a field guide those who do not, and there is an important place also for content that is expertly chosen and expertly presented to the learner, sometimes in high-quality video productions). Or what would be the effect of having more professional, full-time learning evaluation specialists involved in the design and implementation of the course? What about cutting in half the number of students for each instructor, increasing the hours of instructor–student interaction—and systematically monitoring the quality of this? Oh, again, I hear objections on grounds of cost, but we *must* grow beyond the old idea that instruction should be the monopoly of people full-time on the college payroll. There is no justification for the idea

that distributed teaching, any more than distributed learning, is ipso facto inferior. Its quality depends on numerous factors, one of the uppermost being that far less is left to the spontaneity of the instructor and more is organized within the structure of the course—and, yes, this *can* also be constructivist and highly learner-participative! This is all a matter of good-quality creative design, and that depends on better organization of teaching resources—and by comparison, whether we view the program on a CD-ROM (old technology already!), or on a mobile phone are really not such important issues, are they?

**Michael Grahame Moore**  
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